

Titanium Stress Joints

The Superior Solution for Subsea Risers



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Subsea Technologies
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TSJ Advantages & Benefits

Hunting Subsea Technologies' best-in-class TSJs offer unmatched reliability, performance, and corrosion resistance – resulting in lower lifecycle costs and no downtime. When you need durable, flexible, lightweight, and long-lasting connections, TSJs are the superior solution for subsea operations.

For more than a century, Hunting has been creating breakthrough products that shape industries. Through the ingenuity of our people and cutting-edge advanced manufacturing techniques, we deliver these products at a quality and efficiency that ensure customer success.

Highly Durable & Reliable

- Resilient to high temperatures, high pressure and sour service conditions
- Cost-effective across entire range of SCR temperatures and pressures
- Outstanding fatigue life
- Resistant to stiffness changes associated with temperature and load frequency
- Immune to aging and gas absorption; no explosive decompression
- Exceptional corrosion resistance for a longer product lifecycle and no downtime concerns
- Maintenance-free for long-term, backend savings, including 20 years of continuous service without an operational failure ever
- Readily available inhibitors for HF and other chemical exposure
- Hunting Subsea Technologies also manufactures Steel Stress Joints

Adaptable & Flexible

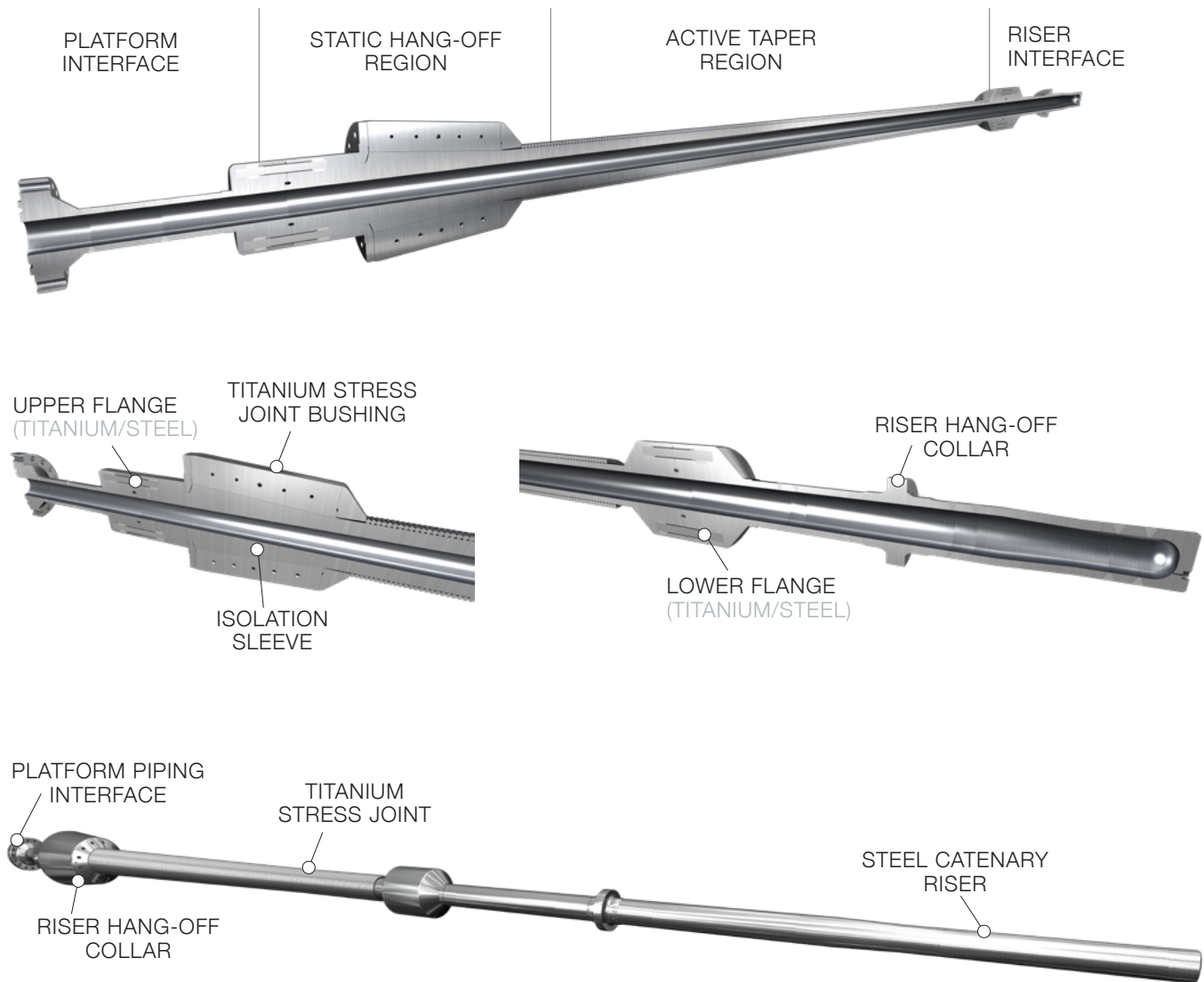
- Approved in major design codes for structures, equipment and other mission-critical applications requiring a strong, ductile metal
- Easy installation with no depth limit to wet parking and no additional requirements or adapters
- API-RP-2RD stress design rules apply directly, no rubber laminates
- Uses common manufacturing and NDE methods (monolithic metal structure)
- Lighter weight and safer to handle offshore, improving CAPEX and OPEX

Scope & Supply

TSJs have three primary interface points:

- Platform pipe above
- Riser pipe below
- Bushing for riser hang off

The upper platform interface is a weld allowing flanged or diverless connectors. At the lower riser interface Hunting Subsea Technologies can supply fatigue-rated girth welds and a hang-off collar attached to customer supplied riser pipe. Refer to product guide for details.



Installation & Aftermarket Support

Hunting Subsea Technologies' experienced and highly skilled field personnel work side-by-side with you to ensure complete and proper installation of components and aftermarket support.

Easy to Install

TSJs have no water depth limitations and can be placed on the seafloor with the flowline for easy recovery. All typical installation techniques can be used including J-Lay, S-Lay, and Reeling.

Integration & Aftermarket Support

We offer a full range of offshore field services and aftermarket support including:

- Integration
- Inspection
- Repair
- Refurbish
- Retrofit



HUNTING

'Excellence in **Energy Services** for over 100 years'

Products and Services

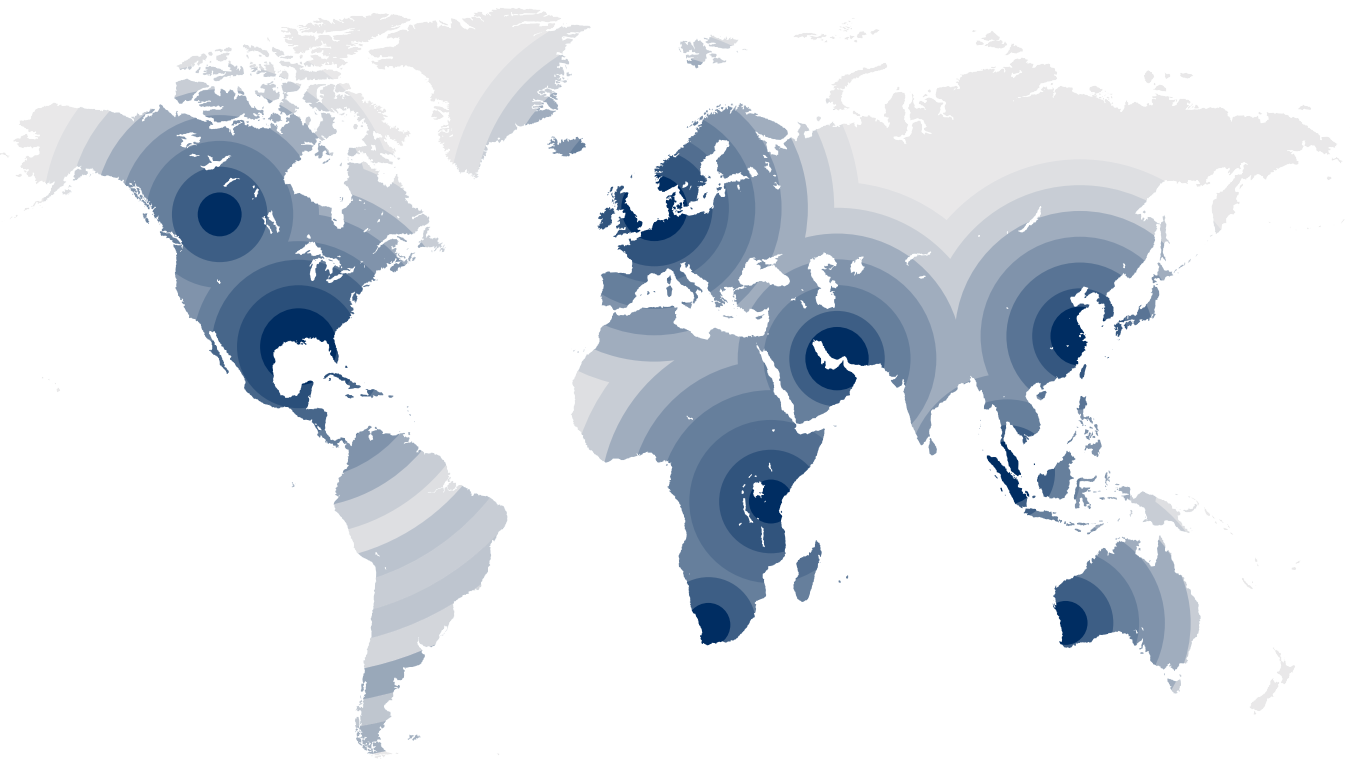
Hunting provides products and services to the world's leading national, international energy companies and oil service companies enabling the extraction of oil and gas. Manufacturing and sales locations are located in the key energy producing regions of the world.

Proprietary Technology

Hunting owns and develops proprietary patented products with a full range of applications below the wellhead including subsea valves and couplings, chemical injection metering valves, titanium stress joints, premium connections, well perforating, logging and intervention tools.

Geographic Footprint

In strategic locations around the world Hunting owns and operates plants, properties and equipment employing people to serve its global customers with local services and products.



Global Business Units

Perforating Systems
OCTG and Premium Connections

Subsea
Intervention Tools

Drilling Tools
Advanced Manufacturing

Titanium Stress Joints

Hunting Subsea Technologies' Titanium Stress Joints (TSJs) offer high-strength, low weight, superior fatigue performance and innate corrosion resistance – ensuring that they thrive in the most arduous deepwater production environments.

TSJs offer unmatched reliability and a field-proven operational history encompassing two decades of continuous subsea operation without a failure. TSJs allow you to efficiently, safely and cost-effectively connect pipelines to the offshore facility.

Hunting Subsea Technologies has delivered over 100 TSJs with some in continuous deepwater service for 20 years. TSJs are currently in operation on steel catenary risers for production, water injection, gas lift, oil export and gas export risers ranging in size from 4- to 20-inches, pressures up to 15ksi, temperatures up to 250°F and water depths below 7,000 feet. However, TSJs can be custom designed for virtually any diameter, pressure, temperature and deepwater depth.

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